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United States Patent [19]**Goldfarb**[11] **Patent Number:** **5,079,527**[45] **Date of Patent:** **Jan. 7, 1992****[54] RECOMBINANT, IN-PHASE, 3-WAY POWER DIVIDER**[75] **Inventor:** **Marc E. Goldfarb, Atkinson, N.H.**[73] **Assignee:** **Raytheon Company, Lexington, Mass.**[21] **Appl. No.:** **622,915**[22] **Filed:** **Dec. 6, 1990**[51] **Int. Cl.⁵** **H01P 5/12**[52] **U.S. Cl.** **333/127; 333/128**[58] **Field of Search** **333/124, 125, 127, 128****[56] References Cited****U.S. PATENT DOCUMENTS**

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[57]**ABSTRACT**

A power divider circuit having an input port and three output ports is described. The circuit includes a first power divider stage having an input port which corresponds to the input of the power divider circuit and a pair of output ports with a first resistor coupled between the pair of output ports of the first stage. The power divider further includes first and second pairs of transmission lines with first ones of said lines of each pair having a first characteristic impedance and second ones of said lines having a second, different characteristic impedance generally equal to half of the characteristic impedance of the first ones of said lines. First ends of each one of the transmission lines of each pair are coupled to a corresponding port of the first power combined stage. Second ends of each of said lines or each pairs are coupled by second and third resistors. Second ends of the second transmission lines of each one of said first and second pairs of transmission lines are also connected together providing the one of the output ports of the power combiner circuit with the other two output ports of the power combiner circuit being provided at second ends of the first transmission lines in each one of said first and second pairs of transmission lines.

1 Claim, 3 Drawing Sheets